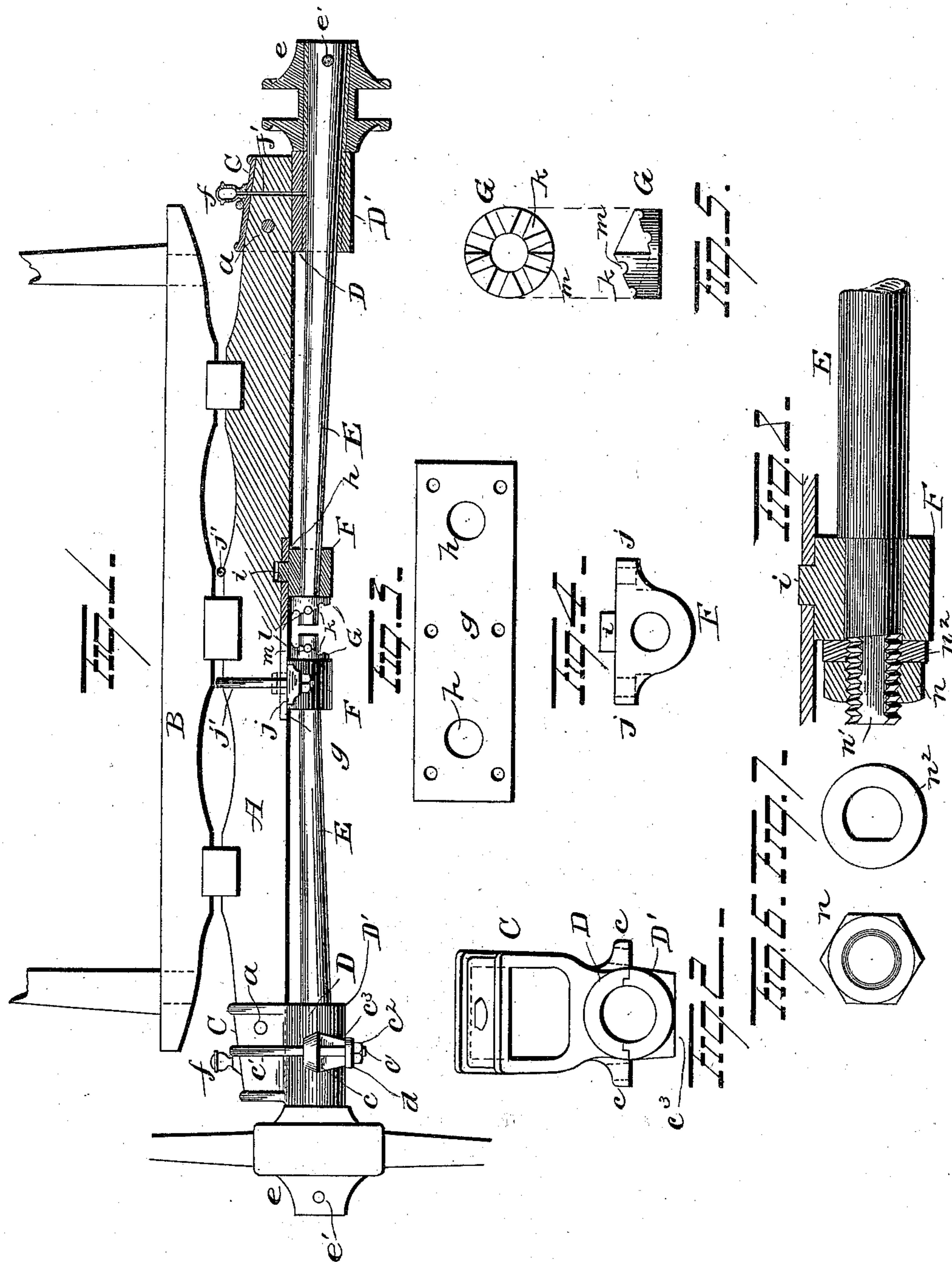


(No Model.)

J. H. CURL & W. G. CUMMINS.
VEHICLE AXLE.

No. 542,607.

Patented July 9, 1895.



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UNITED STATES PATENT OFFICE.

JOHN H. CURL AND WILLIAM G. CUMMINS, OF McMINNVILLE, TENNESSEE,
ASSIGNORS OF ONE-FOURTH TO CLAY FAULKNER, OF SAME PLACE.

VEHICLE-AXLE.

SPECIFICATION forming part of Letters Patent No. 542,607, dated July 9, 1895.

Application filed March 1, 1895. Serial No. 540,200. (No model.)

To all whom it may concern:

Be it known that we, JOHN H. CURL and WILLIAM G. CUMMINS, of McMinnville, in the county of Warren and State of Tennessee, have invented certain new and useful Improvements in Vehicles; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improvement in vehicles, and more particularly to the axles thereof, the object of the invention being to produce vehicle-axles which shall possess stability and simplicity of construction and be cheap to manufacture.

A further object is to so mount a revoluble axle relatively to a fixed axle that the former can be readily adjusted relatively to the latter, whereby to prevent the binding of the revoluble axle in its bearings.

A further object is to so construct the mountings of revoluble axles that they can be readily adjusted for wear and permit the ready withdrawal of the axles when necessary.

A further object is to produce improved devices for mounting revoluble vehicle-axles, which shall co-operate in the effectual performance of their functions.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation, partly in section, illustrating our improvements. Figs. 2, 3, 4, and 5 are detail views. Figs. 6, 7, and 8 are views illustrating modifications.

A represents a stationary axle, which may be of wood or metal, as preferred, and supports the bolster B, which may be secured thereto in any desired manner.

To each end of the fixed axle A a collar or sleeve C is secured, preferably by means of a transverse pin or bolt *a*, and made integral with the lower portion of each collar or sleeve C is a curved plate or block D, which constitutes the upper half of a bearing for a revoluble axle E, the other or lower half of said bearing being formed by means of a curved

block or plate D', and the two blocks or plates constituting the bearing are rabbeted together, as most clearly shown in Fig. 2. Perforated ears *c* project laterally from the block or plate D of the bearing for the accommodation of yokes or straps *c'* which pass over the collars or sleeves C. The free ends of the yokes or straps *c'* project somewhat below the bearings and are made with screw-threads for the reception of suitable nuts *c²*, between which and a seat *c³* on the under face of the block or plate D' the forward end of a bar *d* is inserted and perforated for the passage of the respective members of said yokes or straps, the rear ends of said bars *d* being secured to the hounds in the usual manner.

The end of each axle E which projects laterally beyond the respective bearings above referred to is provided with a wheel, the hub of which is secured to the axle by means of a transverse pin *e'*, or in any other suitable manner. Oil-cups *f* are mounted on the collars or sleeves C and communicate with ducts *f'*, which lead to the bearings and supply the latter and the axles therein with lubricant. Each axle E may be made tapering from its outer to its inner end, which terminates in proximity to the center of the fixed axle A, as shown in Fig. 1, or the major portion of each axle may be made of uniform diameter and its inner end contracted in size, as shown in Fig. 8. A plate *g* is securely fixed to the under face of the fixed axle A at the center thereof, and made with two perforations *h h*, which latter preferably communicate with sockets made in the axle A. Bearing blocks or sleeves F lie parallel with and against the plate *g*, and each bearing block or sleeve is made with a projection *i*, adapted to enter one of the perforations of the plate *g* and project into the socket in the axle A communicating therewith.

The blocks or sleeves F constitute bearings for the inner ends of the axles E, and are made with laterally-projecting perforated ears *j j*, through which the ends of straps or yokes *j'* pass, whereby to secure said blocks or bearings to the axle A, said strips, for this purpose, passing over the latter. On the inner end of each axle E a collar G, having a notched cam-shaped end *k*, is placed, and a

pin *l* passing through the axle is adapted to rest in one of the notches *m* in said collar. The axles may thus be adjusted lengthwise when necessary.

5 Instead of the arrangement just described for retaining the axles *E* in place, the end of each axle *E* may be screw-threaded and flattened at *n'* and provided with a nut *n* and a washer *n*², interposed between it and the bearing-block *F*, as shown in Figs. 6, 7, and 8.

10 The wearing on the outer bearings of the axles *E* can be taken up by screwing up the nuts on the straps or clips *c'*. If the bearings are very greatly worn a new supply of Babbitt metal can be run into the upper part of the bearing, as shown in Fig. 1, there being very little wear on the lower part of the bearing. In the same manner Babbitt metal may be employed to true an axle or adapt the bearing
20 for a smaller axle when desired.

By connecting the bearing blocks *F* with the fixed axle *A* in the manner above explained, it will be observed that they can be readily adjusted on projections *i i* as pivots,
25 so as to exactly align with the outer bearings and thus prevent the binding and cramping of the axle, and that when so adjusted and secured to the axle *A* by means of the straps or clips both lateral and longitudinal movement of the bearing-blocks, and consequently
30 of the inner ends of the axles, will be effectually prevented, and all binding of the axles in the bearings obviated.

Our improvements are very simple in construction, cheap to manufacture, and are very effectual in all respects in the performance of their functions.

40 Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination with a revoluble axle, of an outer bearing therefor and an inner pivotally adjustable bearing, substantially as set forth.

45 2. The combination with a revoluble axle, of an outer bearing therefor, an inner pivotally adjustable bearing, and devices for securing the latter in a fixed position after it has been adjusted, substantially as set forth.

50 3. The combination with a revoluble axle, of an outer bearing, and an inner bearing con-

structed and adapted to be adjusted horizontally and pivotally and prevented from displacement laterally and longitudinally, substantially as set forth.

4. The combination with a revoluble axle, of an outer bearing, an inner bearing, a fixed plate having a perforation and a projection on the inner bearing adapted to enter said perforation and means for securing said bearing in a fixed position, substantially as set forth.

5. The combination with a fixed axle and a revoluble axle, of outer bearings for the revoluble axle secured to the fixed axle, a perforated plate secured to the fixed axle, a bearing block for the inner end of the revoluble axle, a projection on said bearing block entering said perforated plate, and a strap or clip for securing said bearing block to the fixed axle, substantially as set forth.

6. The combination with an outer and an inner bearing and a revoluble axle mounted therein, of a collar mounted on the end of the axle and having a notched cam-shaped end and a pin passing through the axle and adapted to enter one of said notches, substantially as set forth.

7. The combination with a fixed axle, of an outer bearing secured thereto, an inner pivotally adjustable bearing, an axle mounted in said bearings, ears projecting from the inner bearing, and a strap or clip passing through said ears and over the fixed axle, substantially as set forth.

8. The combination with a fixed axle, of a sleeve on the end thereof, a block or plate made integral with said sleeve and forming the upper portion of a bearing for a revoluble axle, a block forming the lower portion of said bearing, ears projecting from one portion of said bearing, and a strap or clip passing through said ears and over the said sleeve, substantially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

JOHN H. CURL.
WM. G. CUMMINS.

Witnesses:
WILL THURMAN,
JOE HOLDER.